Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Federal-State Joint Board on	)	CC Docket No. 96-45
Universal Service	)	

COMMENTS

of the

RURAL TELEPHONE COALITION

and

GVNW-MANAGEMENT, INC.

January 24, 1997

TABLE OF CONTENTS

SUMMARY

The Rural Telephone Coalition and GVNW-Management, Inc. submit that although some progress was made during the January 14-15, 1997, proxy model workshops, several issues remain unresolved. Workshop panelists largely agreed that more study is required before the total impact of the application of these models is fully understood. The workshops also raised many new questions that require further study before mandating the selection of any particular model for the purpose of determining universal service support.

Documentation filed on January 7, 1997, and testimony presented during the workshops revealed that Release 3 of the Hatfield Model will not be available before January 31, 1997. Likewise, while documentation and input data for the Benchmark Cost Proxy Model (BCPM) was provided, data from the output models is not yet available. The RTC and GVNW urge the Commission to invite public comment on the specifics of the updated models once they are made available.

While the RTC and GVNW are pleased that so many relevant problems and new issues that had previously received little attention were brought to the forefront of discussion, the fact remains that premature application of any of the proposed proxy models could be detrimental to small and rural companies serving the high-cost areas and therefore, harmful to the preservation and advancement of universal service. If the Commission opts to adopt the Joint Board's recommendations, the RTC and GVNW urge

the Commission to consider the concerns of small and rural companies at the beginning of any implementation process. In response to specific recommendations made during the workshops, the RTC and GVNW agree that the models must account for changing market share. However, a larger concern regarding the lack of a specified purpose for these models remains. The Commission still needs to define the purpose for which it intends to adopt a model in this or any other proceeding.

The RTC and GVNW agree with those panelists that demanded consistency in the assumptions of the models. If the model represents the costs of an efficient forward-looking competitive network, it must also assume forward-looking cost of capital and recovery of capital through depreciation expense. Similarly, the models must be consistent with any adopted benchmark. The RTC has previously explained that the benchmark should be cost- rather than revenue-based. However, if the Commission adopts the revenue benchmark, the costs in the proxy models must match the revenues included in the benchmark. If revenues for all transport to interexchange carriers are included in the benchmark, then the cost models should include the costs of these services.

Clearly, no answer has yet been provided to address concerns regarding validation of the models. The RTC and GVNW believe that validation must begin at the physical facilities level, with actual engineering studies. The Commission cannot rely on the Hatfield model in this proceeding, as the model includes no input data for census block

groups and study areas served by telephone companies other than the Bell Operating Companies. Additionally, workshop panelists pointed out that the Hatfield model still contains faulty and inconsistent engineering assumptions, and several panelists suggested that it does not adequately address the costs related to difficult terrain.

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The Rural Telephone Coalition ("RTC")[1] and GVNW-Management, Inc. ("GVNW")[2] submit the following comments in response to the Commission's *Public Notice* in the above-captioned proceeding, DA 97-88, released on January 15, 1997, inviting further comments on issues raised during the cost proxy model workshops.[3] The

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[1] The Rural Telephone Coalition is comprised of the National Rural Telecom Association (NRTA), the National Telephone Cooperative Association (NTCA), and the Organization for the Promotion and Advancement of Small Telecommunications Companies (OPASTCO). The RTC filed joint comments and replies on December 19, 1996, and January 10, 1997, in response to the Joint Board's *Recommended Decision* released on November 19, 1996. The RTC also filed comments on the cost models on August 9, 1996.

[2] GVNW submitted comments and replies on December 19, 1996, and January 10, 1997, and represented both itself and the RTC during the proxy model workshops on January 14-15, 1997.

[3] On January 14-15, 1997, the staff of the Federal-State Joint Board on universal service conducted workshops relating to the selection of a proxy model for determining the cost of providing services supported by the universal service support mechanism.

workshops focused on three cost models submitted for consideration on January 7, 1997. US West, Sprint, and Pacific Bell submitted the Benchmark Cost Proxy Model ("BCPM"), a hybrid model based on the BCM2, the latest version of the original US West model prepared for CC Docket No. 80-286, and Pacific Bell's Cost Proxy Model. AT&T Corporation resubmitted the proxy model prepared by Hatfield Associates, Inc. for CC Docket No. 96-98. In addition, the Telecom Economic Cost Model, developed by Ben Johnson Associations, Inc., was introduced to the record by the New Jersey Division of the Ratepayer Advocate.

According to the documentation filed by AT&T on January 7, 1997, Release 3 of the Hatfield Model will not be available before January 31, 1997. The model description and the sample output tables detailing Southwestern Bell - Texas (SWTX) calculation were based on the Hatfield Model, version 2.2, Release 2 ("Hatfield 2.2.2"). The RTC already filed comments regarding the Hatfield 2.2.2 and refers the Commission to this earlier filing.[4] While the RTC and GVNW are able to offer comments on some of the issues raised during the workshops, we are unable to comment extensively on the Hatfield Release 3 before it has been made available to the Joint Board, Commission, and the public.

Likewise, though sponsors of the BCPM were able to provide documentation and input data for the new model, data from the output modules of the new model was not yet available. Further, sponsors have planned to make additional modifications to the inputs

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[4] *See* RTC Comments, CC Docket 96-45, August 9, 1996.

of the BCPM and have planned to introduce this update of the model on February 15, 1997. Due to the fact that the complete versions of the latest models are not available at this time, the RTC and GVNW urge the Commission not to rely solely on the workshop testimony and outside responses to that testimony when evaluating new versions of these models. The Commission should invite public comment on the specifics of the updated models once they are made available.

I. THE WORKSHOPS RAISED MANY NEW QUESTIONS REGARDING THE COST PROXY MODELS, BUT ANSWERED FEW.

The main theme put forth by nearly all workshop panel participants was that more study is required before the total impact of the application of these models is fully understood. In the words of panelist David Dowds (Florida Public Service Commission), "we need to do our homework."[5] While the RTC and GVNW do believe that progress was made during the workshops, the fact that so many questions remain unresolved and that several new issues were raised at this late date clearly shows that mandating the use of any particular model before each of these issues has been studied would be premature. Further analysis is required.

The RTC and GVNW are pleased that so many relevant problems were discussed during the workshops. In addition, several new issues that had previously received little attention were brought to the forefront of the discussion. For example, the issue of market share prompted certain questions. Why has a variable for market share been

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[5] David Dowds, Florida Public Service Commission, Panel 2, January 14, 1997.

excluded from the Hatfield 2.2.2 and the BCPM? If included, how will the appropriate market share input value be determined?[6] Panel members were asked to discuss the relevance of an econometric study to the validation of any particular model input or result,[7] and this brought forth a wide variety of suggestions on the type of econometric analyses that might prove useful or detrimental to the process of selecting a proxy. For the first time, panel participants were also asked whether or not these models may be applied for other purposes, such as for the determination of access charges.[8] The record indicates that previous comment on these topics has been minimal.

The RTC and GVNW are greatly concerned that due to limited time remaining before the pending May 8 date, the Commission will select a particular model and mandate its use before each of these issues is more thoroughly explored.[9] As the RTC has said in earlier comments, premature application of a proxy model that has not been thoroughly analyzed and tested could be detrimental to small and rural companies which serve the highest-cost areas and therefore, harmful to the preservation and advancement

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[6] Several panelists including Ben Johnson (Ben Johnson Associates, Inc.) and Lisa Hanselman (GVNW) stressed the importance of recognizing market share in the model. Panel 1, Question 3, January 14, 1997.

[7] FCC Question 2 for Panel 2 and Question 2 for Panel 4.

[8] *See Public Notice*, DA 96-2091, Released December 1, 1996, at 5.

[9] As the RTC has previously noted, Section 254 (a)(2) requires the Commission to adopt rules by May 8, 1997, which include a definition a services to be supported and a specific timetable for implementation. It does not appear that selection of a specific model is necessarily required by that date.

of universal service.[10] This problem is exacerbated by the fact that the latest versions of the BCPM and the Hatfield model have not yet been made available for comment.

The RTC and GVNW urge the Commission not to rush into selection of a model and mandate its use on May 8, when substantial questions concerning validation remain and a more comprehensive study of the issues listed *supra* is needed. The workshops served to produce valuable questions for future study. The record indicates that panel participants have serious doubts about the status of the models for the purposes of this proceeding, let alone other ongoing proceedings such as access charge reform. Answers to critical questions regarding inputs and assumptions remain, and proper validation of the models is still lacking.[11] Even the sponsors of the BCPM suggested that further validation is needed before a selection is made.[12]

II. IT IS CRITICAL THAT ISSUES OF CONCERN FOR SMALL AND RURAL COMPANIES BE ADDRESSED AT THE BEGINNING OF ANY IMPLEMENTATION PROCESS.

Depending upon how the Commission responds to the RTC's and GVNW's previous suggestions, some rural telephone companies may have to use a proxy immediately if the Commission adopts the Joint Board's recommendations. While the

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[10] RTC Comments at 2, August 9, 1996.

[11] For a discussion on validation of the models, *see*, generally, RTC comments, August 9, 1996.

[12] "Before we depart from a proven trend of what it has taken to provide a given and known level of quality [of service], let's make sure we've got some validation and that that's moving the network in the right direction." Glen Brown, US West, Opening Remarks, January 14, 1997.

Joint Board's *Recommended Decision* proposes that the use of proxy cost models should not be mandatory for rural telephone companies for a three-year period with an additional three-year phase-in period, it also allows for small companies to have the option of choosing the use of the proxy cost models immediately.[13] If the recommendations are adopted, the RTC and GVNW recognize that some rural companies may elect proxies or some other support disaggregation methods in order to alleviate the potential, harmful impact of cream-skimming activity. During the workshops, panelists Robert Schoonmaker (GVNW) and Lisa Hanselman (GVNW) pointed out that in 1995 and 1996 over one hundred transactions took place involving small companies and the purchase and/or transfer of exchange telephone property. Many of these transactions involved the creation of new study areas, while others involved substantial expansion of existing study areas. The mechanisms proposed in the Joint Board recommendations consist of freezing existing universal service support levels based on 1995 amounts and freezing DEM weighting support levels and Long-Term Support levels based on 1996 amounts.[14] The freeze proposal would provide no frozen support for some companies involved in recent purchase transactions, or inadequate support for others where the frozen levels are based on a much smaller-sized company. Additionally, other small companies who invested in major facility upgrades in outside distribution plant or in switching during the 1995 to 1996 time period may find that the freeze mechanisms have excluded consideration of

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[13] *Recommended Decision* at para. 286.

[14] *Id.* at 293.

these investments from support considerations.

Therefore, if the Commission decides to adopt the proposed freeze,[15] these companies will need to elect the new proxy cost model mechanisms or some alternative immediately upon implementation in 1998 if it will provide comparable support to other rural serving areas served by either small or large telephone companies. Thus, the proxy models that are developed for implementation in 1998 must include analysis of small company operating areas and provide a means for small companies who desire and need to receive universal service support based on the adopted proxy cost model or other alternative.

III. MARKET SHARE DESERVES CONSIDERATION, BUT THE UNDERLYING PURPOSE OF THE MODEL MUST FIRST BE CLEARLY DEFINED.

The RTC and GVNW strongly support panel statements asserting the importance of market share as a key component and necessary input, and the RTC has raised this point in earlier comments.[16] As the industry moves toward competition, model proponents must be able to account for multiple providers of service within a single study area. "It is a very important point, and one that has not been emphasized enough, [that]

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[15] The RTC recommended that the Commission reject the Joint Board's recommendation to freeze the per-line universal service support for the first three transitional years beginning in 1998, as a freeze would set back progress in rural areas by halting the deployment of upgrades and new infrastructure, especially in the case of areas where long overdue upgrades have been planned by acquiring companies and necessarily involve increases in per line costs. *See* RTC Comments at viii, December 19, 1997.

[16] *See*, for example, RTC Comments at 2, January 7, 1997.

the costs on a per-loop or per-customer basis are sensitive to market share."[17]

The newly introduced Telecom Economic Model[18] appears to be the only model that can explicitly account for changes in market share, performing calculations for a multiple-provider scenario. The RTC and GVNW note, however, that the documentation filed on January 7, provided a sample run of the SWTX study area for which Southwestern Bell's market share was set at 100 percent. We do not mean to suggest that another level of market share would have been more appropriate for this particular sample run. Nor do we believe that the proxy models, which sponsors purport to be forward-looking in nature,[19] should assume that market-share is 100 percent. As suggested during the workshop, if the models are intended to recognize the costs of a new entrant to the

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[17] Ben Johnson (Ben Johnson Associates, Inc.), Panel 1, January 14, 1997.

[18] The Telecom Economic Cost Model sponsored by the New Jersey Division of the Ratepayer Advocate was first introduced into the universal service proceeding on January 7, 1997. The RTC and GVNW have had little opportunity to review the model, its underlying assumptions, and the results it produces. While the descriptive material regarding the model includes some features that might be promising, the RTC and GVNW are skeptical of the validity of this model in the universal service proceeding. The model is built with its basic input including the average loop length per wire center. Since the data has to come from outside the model, it would either have to be developed for all wire centers based on current actual data or modeled by some other model. The data provided with the January 7, 1997 filing is based on average loop lengths for wire centers produced by the BCM2. In its current state, the Telecom Economic Cost Model is not self-contained and could not be used without supporting data from other models to supply the necessary input regarding loop lengths.

[19] *See* Joint Board criteria for proxy model evaluation, *Recommended Decision* at para. 277.

market, it is doubtful that a new entrant would have 100 percent of the market.[20]

The more important question that remains concerns the lack of a clear purpose for the use of these models. Throughout this proceeding, model proponents have suggested different purposes for the models - ranging from the mere targeting of high-cost support[21] to the determination of economic costs of unbundled network elements.[22] The RTC is disturbed that the Joint Board and the Commission have never clearly answered the question about *which* purpose the Commission intends a model adopted here to serve.[23] Rather, the purpose of the models appears to be a vague and moving target, continually expanding. Now the staff has asked panelists to consider how the models might be used in multiple proceedings. The RTC and GVNW strongly concur with the comment from the audience representative of Janney Montgomery Scott: "We still have to deal with the question, what is the model trying to do?"[24] The question regarding what the models are

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[20] Robert Schoonmaker, GVNW, Panel 3, Question 1, January 15, 1997.

[21] *See* Comments of US West at 13, April 12, 1996.

[22] *See* Comments of AT&T, *Hatfield Model, Version 2.2, Release 1* at 1, CC Docket No. 96-98, May 16, 1996.

[23] There is danger in this failure to identify the purpose of the models. The targeting and determination of the amount of high cost support must take account of the stranded investment of incumbents. Model proponents must factor these legitimate costs into the equation if the purpose of the models is to determine support levels. Recognizing the legitimacy of these costs, Chairman Reed Hundt, in a recent speech, acknowledged that the Commission must address the issue of incumbents' embedded costs in this proceeding on universal service and in the access reform proceeding. Speech to Competitive Policy Institute on January 14, 1997.

[24] Question to Panel 3, January 15, 1997.

supposed to do must be answered first, before it can be determined whether the models successfully do what they are intended to do.[25]

IV. THE MODELS' COSTS AND THE REVENUE BENCHMARK MUST BE CONSISTENT.

In previous comments, the RTC demonstrated the fatal problems with the Joint Board's proposed revenue benchmark.[26] During the proxy model workshops, there was some discussion on a subject which has received little attention: the question of consistency between costs portrayed in the cost models and the revenues that are to be used in the proposed revenue benchmark. In further developing and refining the model to be used, the model should develop costs associated with the revenues being used in the revenue benchmark.

The cost models are being developed to estimate those costs associated with providing local service functions included in the recommended universal service definition.[27] Interoffice transport costs are only included to the extent that local service in multi-wire center configurations. Switching costs are generally being developed to exclude the costs of features necessary to provide CLASS services. Costs for ISDN service have intentionally been excluded. Adjustments are being made to some expense levels so as to include only the costs associated with the provision of the defined

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[25] *See* RTC Comments at 3, August 9, 1996.

[26] *See* RTC Comments at 23-24, December 19, 1996.

[27] *Recommended Decision* at paras. 46-53.

universal services.

The Joint Board recommendation regarding the derivation of the revenue benchmark, however, contemplates using revenues beyond those associated with universal service. The revenue benchmark is conceptually intended to identify current national revenue sources that produce revenues offsetting the total network cost used in providing universal service. The Joint Board proposal, however, includes all local revenue sources as well as access revenues as part of the revenue benchmark. Including these revenue sources, if followed in the final adoption of the new universal service fund mechanism, would mean including revenues from CLASS and ISDN. If all access revenues are included in the benchmark, these revenues would not only include access revenues supporting the local loop and local switching, but would also include local transport access revenues. Further, revenues that support non-local expenses such as CABS billing, carrier relations and other expenses that have been excluded from the cost models would also be included.

At some point in the process of developing the cost models and the revenue benchmark, rationality would require that the costs and revenues be included in both sides of the equation. If revenues for all transport to interexchange carriers are included, the cost models should include the cost of these services. Similarly, if access revenues are to be included in the revenue benchmark, costs included in the cost models should include the cost of provisioning access services as well as local services.[28] These problems

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[28] *See* RTC Reply Comments at 16, January 10, 1997.

demonstrate why the benchmark should be cost- rather than revenue-based.

V. THE MODELS' ASSUMPTIONS/INPUTS MUST BE CONSISTENT.

During the workshop discussion of the investment and expense portions of the model, much emphasis was placed on the fact that the models do not attempt to reproduce embedded incumbent LEC networks, but were rather designed to produce forward-looking costs of the network that an efficient competitor would build. Many participants argued that comparisons of the modeled networks to embedded costs would not be valid since the modeled networks were intended to be different networks. They further postulated that expense levels on a forward-looking basis might be substantially different than existing expense levels, especially for customer and corporate operations expenses.

However, when discussing the cost of capital and depreciation expense rates, these same parties substantially changed their point of reference and generally supported the proposition that embedded incumbent LEC costs of capital and regulatory-derived depreciation rates based on embedded capital accounts are appropriate measures. If the models are to represent the costs of an efficient forward-looking competitive network, that assumption should apply to all costs modeled, including forward-looking cost of capital and recovery of capital through depreciation expense. The forward-looking cost of capital and the economic life of equipment of an efficient competitor will not be the same as those of an incumbent LEC with its embedded equipment cost.

VI. THE MODELS STILL CONTAIN SEVERAL PROBLEMS STATED IN PREVIOUS COMMENTS.

A. QUESTIONS CONCERNING VALIDATION REMAIN UNANSWERED.

Clearly, neither the previous record nor the proxy model workshops provide an answer to the question of validation. The Joint Board recommended a list of eight criteria by which to evaluate the models. This list provides that "all underlying data should be verifiable, engineering assumptions reasonable, and outputs plausible."[29] Despite significant discussion, there was an overall lack of firm conclusions on how to validate these models. Panelists were simply asked to debate the pros and cons concerning how comparisons of model outputs to embedded costs or the use of econometric methods might be helpful in the pursuit to validate the models[30] However, during the first panel concerning network investment, Panelist John Schrotenboer of Southwestern Bell Telephone Company asserted that the Commission should consider testing inputs and assumptions (e.g., fill factors) against actual engineering studies, "as they provide some basis for determining what's reasonable."[31] The RTC and GVNW concur. "Proper testing and evaluation of the models must involve actual engineering studies, else the

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[29] *Recommended Decision* at para. 277.

[30] FCC Questions for Panel 4, January 15, 1997.

[31] John Schrotenboer, Southwestern Bell Telephone Company, Panel 1, Question 3, January 14, 1997.

accuracy of the models cannot be determined." [32]

Validation of the models must begin at the physical facilities level where specific arguments about various cost inputs are excluded from consideration. At the most fundamental level, if the models cannot project the number of customers to be served by the modeled network with reasonable accuracy, it is highly unlikely that the network itself will be accurate. Robert Schoonmaker (GVNW) and Lisa Hanselman (GVNW) pointed out that the National Exchange Carrier Association (NECA) had previously submitted an analysis comparing the customers projected by the BCM2 model to customer data reported to NECA for the purpose of universal service support. When examined in detail, this analysis shows that of the 1386 study areas, the BCM2 model estimates of customer lines are more than 50 percent different than actual in 405 study areas (29 percent of the total) and more than 25 percent different than actual in 794 study areas (57 percent of the total).[33] With this significant lack of "reasonable accuracy" in predicting customer line counts, one would have little confidence that the networks developed on the basis of these assumptions would reflect realistic projections of forward-looking costs. Developers indicate that the BCPM and the Hatfield Release 3 will do better in estimating customer line counts, but initial validation of the models should include testing at the individual study area level to see whether customer line count estimates are reasonable.

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[32] *See* RTC Comments at iii-iv, August 9, 1996.

[33] *See* NECA Comments, August 9, 1996. Note that no similar analysis of the Hatfield model is possible at this time since that model excludes data for all but the Bell Operating Company study areas.

B. THERE REMAINS LITTLE EVIDENCE THAT ONE PROXY CAN MODEL BOTH LARGE AND SMALL CARRIERS IN MOST, IF NOT ALL, CASES.

During the workshops, Telecom Economic Model developer Ben Johnson recommended that the Commission initiate a formal data-collection effort, involving a large data request to both large and small companies. This type of data may already be available in some circumstances; for example, certain states such as Florida require annual reports to be filed in the ARMIS format, and NECA keeps data on its cost company members. However, the RTC and GVNW ask the Commission to note the remarks of Roger White (GTE Telephone Operations) and William Taylor (National Economic Research Associations, Inc.) regarding the collection of small telephone company data. White asked the following questions:

> with small company data in hand, what do we do with it? Do we pool it with the large company data in which case it would become lost? ... or do we treat it as a stand-alone basis? ... what it's saying to me is there are some fundamental flaws with the model.[34]

These questions relate to the larger question regarding the basic structure of the various models. Can one model be applied to predict costs for all companies, regardless of size? Despite the progress made in modifications to the models and discussions on the record and at the workshops, the RTC and GVNW remain concerned that model proponents have not yet been able to change the fact that the high cost areas which are both unique and varied, continue to be the hardest to find predictive variables with which to model

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[34] Roger White, GTE Telephone Operations, Panel 2, Question 2, January 14, 1997.

"proper cost." Taylor echoed this concern:

> Looking at what the small telephone company experience has been ... is not useful for telling us what the costs for an efficient entrant are going to be ... The Commission has looked at this issue for years, ... [the task] is made no more easy because it is trying to be put on a forward-looking basis ... The standard of accuracy ... has to be the same ... that [has been] used in accounting work at the FCC, at NECA ... Proxy cost models, I'm afraid, don't fit in well to that story.[35]

C. WORKSHOP PANELISTS HIGHLIGHTED SEVERAL REMAINING PROBLEMS WITH THE HATFIELD MODEL.

Here the RTC and GVNW list four remaining problems with the Hatfield 2.2.2 and Release 3 (according to documentation filed on January 7) that were emphasized during the workshop panels. First, in addition to the ongoing concerns regarding the overall impact of proxies on small, rural companies, the RTC and GVNW continue to experience difficulty in running the Hatfield 2.2.2 for practical testing purposes. Panelist Lisa Hanselman (GVNW) stated that she was unable to test even the mechanics of the Hatfield 2.2.2, as the Hatfield model does not include data for census block groups and study areas served by telephone companies other than the Bell Operating Companies. [36] It is truly impossible for rural companies not to be skeptical about the adoption of the Hatfield model when the model cannot yet be run for small, rural incumbents. This deficiency, if not corrected, should exclude the Hatfield model from consideration as the Universal Service Fund proxy cost model. Descriptions of the changes to be made to the

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[35] William Taylor, National Research Economic Associates, Inc., Panel 2, Question 2, January 14, 1997.

[36] Lisa Hanselman, GVNW, Panel 1, Question 2, January 14, 1997.

Hatfield Release 3, presented during opening remarks of the January 14 workshop, did not include discussion concerning the addition of independent company data to the model as one of the significant modifications. Only later during the workshop panels did representatives of the Hatfield model indicate that independent company data would be included in Release 3. Panelist Robert Mercer (Hatfield Associates) asserted that the Hatfield model "works perfectly fine for rural companies ... it's a database issue."[37] Whether this was intended all along, but represented as a "mid-point" correction made on the spot by the Hatfield proponent is unclear. It remains to be seen whether, in fact, this modification will be included in the January 31, 1997, Release 3. While there is clearly a data problem which affects the application of the Hatfield 2.2.2 to small companies, the simple fact remains that the Commission cannot rely on Hatfield model results for small telephone companies at this time for universal service support or any other purpose.

Dr. Christensen of Christensen Associates identified the lack of independent data in the Hatfield model as one of the four major items largely explaining the differences between that model and the BCM2.[38] Vincent Callahan (NYNEX) also provided a summary of his company's analysis on the impact of excluding small company data from the Hatfield model. By excluding the same geographic areas from their runs of the BCM2 model, the estimated overall Universal service Fund dropped from a level of $7.4

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[37] Robert Mercer, Hatfield Associates, Inc., Panel 1, Question 2, January 14, 1997.

[38] *Economic Evaluation of Proxy Cost Models for Determining Universal Service Support*, Christensen Associates, January 9, 1997.

billion to slightly over $3 billion.[39] Both from an individual company basis and from an understanding of the overall Universal Service Fund size, it is imperative that the adopted proxy cost model include data for *all* LECs.

Secondly, the Hatfield model continues to rely on inconsistent cost of capital and depreciation rate inputs. As discussed *supra*, the RTC and GVNW agree with those panelists that argued for consistent inputs and assumptions. The Hatfield model relies on LEC embedded cost of capital and depreciation rates, but does not use embedded cost data. This is a clear example of inconsistent assumptions, unfairly biased against incumbent LECs. On the other hand, the BCPM documentation claims to rely on a figure which represents a forward-looking estimate of cost of capital and depreciation.[40]

Third, the assumption made regarding the sharing of structures is another major difference identified by Christensen Associates between the Hatfield 2.2.2 and the BCM2.[41] The Hatfield model assumes that all structure costs (i.e., poles, conduit, trenching, plowing) will be shared with two other providers (presumably the electric utility and the cable television company), and therefore only one-third of the cost of all structures should be charged to telephone service. The BCM2 model assumes that 100 percent of the structure costs will be assigned to telephony. The BCPM proponents

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[39] Vincent Callahan, NYNEX, Panel 4, Question 1, January 15, 1997.

[40] Joint Comments of Pacific Bell, Sprint, and US West, January 8, 1996.

[41] *Economic Evaluation of Proxy Cost Models for Determining Universal Service Support*, Christensen Associates, January 9, 1997.

indicate that this successor to the BCM2 will assign portions of the structure costs to other utilities with percentages varying by structure type and by density zone. The percentages proposed would assign substantially more than the 33 percent proposed the by Hatfield sponsors.

For rural areas, the Hatfield model assumptions regarding structure costs are inappropriate whether analyzed on a historical or forward-looking basis. While many rural towns have cable television providers, many still do not. More importantly, cable television generally stops at the edge of town while telephony service extends far out into the rural areas outside of town. In most areas outside the immediate town, there is no cable television provider with which to share costs. Also, in many rural areas electric companies and telephony use different construction methods for providing facilities, differences which lead to a scenario in which there is no sharing of structure costs. Typically, particularly in large parts of the Midwest and West, telephony networks are provided using buried plant, with much of it plowed into the ground at relatively shallow depths. This is standard construction not only in rural areas, but in the towns as well. In these same areas, electric service is typically and primarily provided via aerial plant. While telephony service in some rural areas is provided on an aerial basis (primarily inside towns) and there exists some structure sharing of poles, it is more likely that the plant is built differently with no structure sharing. The Hatfield assumption of three providers always sharing structure costs is completely unrealistic for rural areas.

Other panelists pointed out this faulty engineering assumption that remains a part

of the Hatfield model. For example, panelist Peter Martin (BellSouth) emphasized the fact that the Hatfield model provides for 35 foot poles while at the same time assumes that two-thirds of the carrier's infrastructure is shared. "Hatfield uses 35 foot poles. That would provide insufficient clearance over roads when you're sharing between telephone and electric cables ..."[42] Again, this is an example of inconsistency and an input error which cannot be ignored. "There are so many problems with the Hatfield model, I just don't see how you can use it at this time in this proceeding."[43]

Finally, unlike the BCPM, the Hatfield model does not account for the impact of difficult terrain with variable inputs. Instead, it adds twenty percent to the structure sharing costs and assumes the provider can "work its way around the problem." Several panelists clearly stated their disapproval of this method, as it does not correctly address the problem of terrain.[44] The RTC and GVNW ask the Commission to seriously consider comments made during the workshops regarding the modeling costs affected by difficult terrain, as this is an input which greatly affects its rural telephone company members and clients.

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[42] Peter Martin, BellSouth, Panel 1, Questions 4, January 14, 1997.

[43] *Ibid.*

[44] Both Telecom Economic Model developer Ben Johnson and proponents of the BCPM disagreed with Hatfield's 20 percent adder.